



# AIR PERMIT ROUTING/APPROVAL SLIP-Permits

7-71-15

Sign by 7/31



AI No.	4634	Company	LOOP LLC	Date Received	12/30/2014
Activity No.	PER20140001, PER20140002	Facility	Deepwater Port Complex	Permit Type	
CDS No.	1560-00027	Permit No.	1560-00027-V1, PSD-LA-796	Expedited Permit	<input checked="" type="checkbox"/> yes <input type="checkbox"/> no

1. Technical Review	Approved	Date rec'd	Date FW	Comments
Permit Writer <i>Kermit Wittenburg</i>	<i>KW</i>		<i>6/1/15</i>	
Air Quality / Modeling				
Toxics				
Technical Advisor	<i>Dan</i>		<i>6/2/15</i>	
Supervisor				
Other				
2. Management Review (if PN req'd)	Approved	Date rec'd	Date FW	Comments
Supervisor				
Manager				
Assistant Secretary (PN)	<i>DBT</i>		<i>6/9/15</i>	
3. Response to Comments (if PN req'd)	Approved	Date rec'd	Date FW	Comments
Supervisor				
Manager				
Administrator				
Legal (BFD)				
4. Final Approval	Approved	Date rec'd	Date FW	Comments
Supervisor				
Manager	<i>app</i>		<i>7/30/15</i>	
Administrator				
Assistant Secretary	<i>DBT</i>		<i>7/30/15</i>	<i>Please see note</i>

1. Technical Review					
PN of App needed	<input checked="" type="checkbox"/> yes <input type="checkbox"/> no	Date of PN of App	<i>2/3/15</i>	Newspaper	<i>Daily Comet</i>
Fee paid	<input checked="" type="checkbox"/> yes <input type="checkbox"/> no				
NPS applies	<input checked="" type="checkbox"/> yes <input type="checkbox"/> no	PSD/NNSR applies	<input checked="" type="checkbox"/> yes <input type="checkbox"/> no	NESHAP applies	<input type="checkbox"/> yes <input checked="" type="checkbox"/> no

2. Post-Technical Review					
Company technical review	<input checked="" type="checkbox"/> yes <input type="checkbox"/> no <input type="checkbox"/> n/a	E-mail date	<i>6/1/15</i>	Remarks received	<input type="checkbox"/> yes <input checked="" type="checkbox"/> no
Surveillance technical review	<input checked="" type="checkbox"/> yes <input type="checkbox"/> no <input type="checkbox"/> n/a	E-mail date	<i>6/1/15</i>	Remarks received	<input type="checkbox"/> yes <input checked="" type="checkbox"/> no

3. Public Notice					
Public Notice Required	<input checked="" type="checkbox"/> yes <input type="checkbox"/> no				
Library	<i>Lafourche Parish</i>				
PN newspaper 1/City	<i>The Advocate/Baton Rouge</i>	PN Date	<i>6/15/15</i>	EDMS Verification	<input checked="" type="checkbox"/> yes <input type="checkbox"/> no
PN newspaper 2/City	<i>Daily Comet</i>	PN Date	<i>6/15/15</i>	EDMS Verification	<input checked="" type="checkbox"/> yes <input type="checkbox"/> no
Company notification letter sent	Date mailed	<i>6/17/15</i>			
EPA PN notification e-mail sent	Date e-mailed	<i>6/15/15</i>			
OES PN mailout	Date	<i>6/15/15</i>			

4. Final Review					
Public comments received	<input type="checkbox"/> yes <input checked="" type="checkbox"/> no	EPA comments rec'd	<input type="checkbox"/> yes <input checked="" type="checkbox"/> no	Date EPA Resp. to Comments-mailed	
Company comments received	<input type="checkbox"/> yes <input checked="" type="checkbox"/> no	PN info entered into Permit Sec VI	<input checked="" type="checkbox"/> yes <input type="checkbox"/> no	Date EPA approved permit	<i>7/30/15</i>
Comments	<i>Fund 85-20090201 NBS E. 990011.10 Ord No DEREP1008547</i>				

**BOBBY JINDAL**  
GOVERNOR



**PEGGY M. HATCH**  
SECRETARY

**State of Louisiana**  
**DEPARTMENT OF ENVIRONMENTAL QUALITY**  
**ENVIRONMENTAL SERVICES**

Certified Mail No. 7004 2510 0006 3854 5677

Agency Interest (AI) No. 4634  
Activity No. PER20140002

Mr. Morgan B. Wolfe  
Vice President of Operations  
LOOP LLC – Port Complex  
137 Northpark Blvd.  
Covington, Louisiana 70433-5071

RE: Prevention of Significant Deterioration (PSD) Permit PSD-LA-796  
LOOP LLC - Deepwater Port Complex, LOOP LLC  
Galliano, Lafourche Parish, Louisiana

Dear Mr. Morgan B. Wolfe:

Enclosed is your permit, PSD-LA-796. Construction of the proposed project is not allowed until such time as the corresponding Part 70 Operating Permit is issued.

Please be advised that pursuant to provisions of the Environmental Quality Act and the Administrative Procedure Act, the Department may initiate review of a permit during its term. However, before it takes any action to modify, suspend or revoke a permit, the Department shall, in accordance with applicable statutes and regulations, notify the permittee by mail of the facts or operational conduct that warrant the intended action and provide the permittee with the opportunity to demonstrate compliance with all lawful requirements for the retention of the effective permit.

Should you have any questions, contact Kermit Wittenburg of the Air Permits Division at (225) 219-3390.

Sincerely,

A handwritten signature in cursive script that reads "Tegan B. Treadaway".

Tegan B. Treadaway  
Assistant Secretary

July 30, 2015

Date

TBT:KCW

c: US EPA Region VI

Agency Interest No. 4634

PSD-LA-796

**AUTHORIZATION TO CONSTRUCT AND OPERATE A MODIFIED MAJOR SOURCE  
PURSUANT TO THE PREVENTION OF SIGNIFICANT DETERIORATION  
REGULATIONS IN LOUISIANA ENVIRONMENTAL REGULATORY CODE,  
LAC 33:III.509**

In accordance with the provisions of the Louisiana Environmental Regulatory Code,  
LAC 33:III.509,

LOOP LLC  
137 Northpark Blvd  
Covington, Louisiana 70433

is authorized to construct the tank project at the LOOP LLC - Port Complex at

224 E 101st Pl  
Cut Off, Louisiana 70345

subject to the emissions limitations, monitoring requirements, and other conditions set forth  
hereinafter.

This permit and authorization to construct shall expire at midnight on January 30, 2017,  
unless physical on site construction has begun by such date, or binding agreements or contractual  
obligations to undertake a program of construction of the source are entered into by such date.

Signed this 30 day of July, 2015.



Tegan B. Treadaway  
Assistant Secretary  
Office of Environmental Services  
Louisiana Department of Environmental Quality

## **BRIEFING SHEET**

**LOOP LLC - Port Complex**  
**Agency Interest No.: 4634**  
**LOOP LLC**  
**Galliano, Lafourche Parish, Louisiana**  
**PSD-LA-796**

### **PURPOSE**

LOOP LLC proposes to construct six additional crude oil storage tanks. The emission estimate basis for the existing emissions cap will also be revised to increase the facility throughput from 182.5 MMbbl/yr to 200 MMbbl/yr and increase the number of tank landings from 26 per year to 90 per year, as well as to include one tank cleaning per year.

### **RECOMMENDATION**

Approval of the proposed construction and issuance of a permit.

### **REVIEWING AGENCY**

Louisiana Department of Environmental Quality, Office of Environmental Services, Air Permits Division.

### **PROJECT DESCRIPTION**

LOOP LLC proposes to construct six additional crude oil storage tanks. The emission estimate basis for the existing emissions cap will also be revised to increase the facility throughput from 182.5 MMbbl/yr to 200 MMbbl/yr and increase the number of tank landings from 26 per year to 90 per year, as well as to include one tank cleaning per year.

Estimated emissions, in tons per year, are as follows:

<u>Pollutant</u>	<u>Baseline Actual Emissions</u>	<u>Projected Actual Emissions/PTE</u>	<u>Contemporaneous Changes</u>	<u>Net Emissions Increase</u>	<u>PSD de minimis</u>	<u>Review required?</u>
PM <sub>10</sub>	2.34	0.49	0	-	15	No
PM <sub>2.5</sub>	2.34	0.49	0	-	10	No
SO <sub>2</sub>	1.88	0.43	0	-	40	No
NO <sub>x</sub>	51.23	10.15	0	-	40	No
CO	10.01	2.24	0	-	100	No
VOC	182.59	437.54	0	254.95	40	Yes

### **TYPE OF REVIEW**

Particulate matter (PM/PM<sub>10</sub>/PM<sub>2.5</sub>), sulfur dioxide (SO<sub>2</sub>), nitrogen oxide (NO<sub>x</sub>), and carbon monoxide (CO), emissions from the proposed modification will be below PSD significance levels. Therefore, the requested permit was reviewed in accordance with PSD regulations for VOC emissions. Emissions of LAC 33:III.Chapter 51-regulated toxic air pollutants (TAP) have been reviewed pursuant to the requirements of the Louisiana Air Quality Regulations.

### **BEST AVAILABLE CONTROL TECHNOLOGY**

VOC emissions are above PSD significance levels and must undergo PSD analyses. The selection of control technology was based on the BACT analysis using a "top down" approach

## **BRIEFING SHEET**

### **LOOP LLC - Port Complex**

**Agency Interest No.: 4634**

### **LOOP LLC**

**Galliano, Lafourche Parish, Louisiana**

**PSD-LA-796**

and included consideration of control of toxic materials. BACT was determined to be external floating roof tanks meeting NSPS Kb. BACT for storage tank landings is to limit the time that the floating roof is landed and complying with 40 CFR 60.112b(a)(2)(iii) during each roof landing event. BACT for storage tank cleaning is to limit the amount of time between the cessation of pumping out product and the start of liquid heel and sludge removal from the tank floor during floating roof cleaning.

### **AIR QUALITY IMPACT ANALYSIS**

Prevention of Significant Deterioration regulations require an analysis of existing air quality for those pollutants emitted in significant amounts from a proposed major modification.

Industrial Source Complex, Short-Term, Version 3 (ISCST3) modeling indicates maximum ground level concentrations of PM<sub>10</sub>, SO<sub>2</sub>, NO<sub>x</sub>, and CO are below the ambient significance levels and preconstruction monitoring exemption levels. Therefore, no preconstruction monitoring, increment analysis, or refined modeling is required for these pollutants.

VOC emissions from the proposed facility will exceed 100 tons per year; therefore, an ambient air quality analysis and preconstruction monitoring are required for ozone. Based on the proposed site's proximity to an existing LDEQ ozone monitor in Thibodaux, Lafourche Parish, LA (AQS Site ID: 22-057-0004) and the meteorological factors that indicate this data is representative of existing air quality conditions at the proposed site, a waiver for preconstruction monitoring was granted. This monitoring station is approximately 38 miles north-west of the site location. The prevailing wind from the site is towards this monitor (from the southeast) For post-construction monitoring, LDEQ has approved the use of the Thibodaux, Lafourche Parish, LA ozone monitor.

### **ADDITIONAL IMPACTS**

Soils, vegetation, and visibility will not be adversely impacted by the proposed facility, nor will any Class I area be affected. The project will not result in any significant secondary growth effects. No new permanent jobs will be created.

### **PROCESSING TIME**

Application Dated:	December 29, 2014
Application Received:	December 30, 2014
Additional Information Dated:	April 27, 2015
Effective Completeness Date:	June 5, 2015

### **PUBLIC NOTICE**

A notice requesting public comment on the permit was published in The Advocate, Baton Rouge and in The Lafourche Gazette in Lafourche Parish on June 15, 2015. A copy of the public notice was mailed to concerned citizens listed in the Office of Environmental Services Public Notice Mailing List on June 15, 2015. The draft permit was also submitted to US EPA Region VI on June 15, 2015. No comments were received.

## **I. APPLICANT**

## PRELIMINARY DETERMINATION SUMMARY

### LOOP LLC - Port Complex

Agency Interest No.: 4634

### LOOP LLC

Galliano, Lafourche Parish, Louisiana

PSD-LA-796

June 5, 2015

LOOP LLC  
137 Northpark Blvd  
Covington, Louisiana 70433

## II. LOCATION

LOOP LLC - Port Complex is located at 224 E 101st Pl in Cut Off, Louisiana. Approximate UTM coordinates are 764302 kilometers East, 3261267 kilometers North, zone 15.

## III. PROJECT DESCRIPTION

LOOP LLC proposes to expand its Clovelly Dome Storage Terminal as follows:

1. Add six (6) 371,000 bbl crude oil storage tanks (Emission Point Nos. 22-14 through 27-14);
2. Increase the tank landings from the previous calculated basis of 26 per year to a calculated basis of 90 tank landings per year;
3. Adjust the landing losses in the existing cap (Emission Point TANK CAP);
4. Update the TANK CAP emissions basis to include one tank cleaning per year;
5. Update the TANK CAP emissions basis from the previous throughput of 182.5 MMbbl/year to 200 MMbbl/year;

Estimated emissions, in tons per year, are as follows:

<u>Pollutant</u>	<u>Baseline Actual Emissions</u>	<u>Projected Actual Emissions/PTE</u>	<u>Contemporaneous Changes</u>	<u>Net Emissions Increase</u>	<u>PSD de minimis</u>	<u>Review required?</u>
PM <sub>10</sub>	2.34	0.49	0	-	15	No
PM <sub>2.5</sub>	2.34	0.49	0	-	10	No
SO <sub>2</sub>	1.88	0.43	0	-	40	No
NO <sub>x</sub>	51.23	10.15	0	-	40	No
CO	10.01	2.24	0	-	100	No
VOC	182.59	437.54	0	254.95	40	Yes

## IV. SOURCE IMPACT ANALYSIS

A proposed net increase in the emission rate of a regulated pollutant above de minimis levels for new major or modified major stationary sources requires review under Prevention of Significant Deterioration regulations, 40 CFR 52.21. PSD review entails the following analyses:

- A. A determination of the Best Available Control Technology (BACT);
- B. An analysis of the existing air quality and a determination of whether or not preconstruction or postconstruction monitoring will be required;

## **PRELIMINARY DETERMINATION SUMMARY**

**LOOP LLC - Port Complex**

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**LOOP LLC**

**Galliano, Lafourche Parish, Louisiana**

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- C. An analysis of the source's impact on total air quality to ensure compliance with the National Ambient Air Quality Standards (NAAQS);
- D. An analysis of the PSD increment consumption;
- E. An analysis of the source related growth impacts;
- F. An analysis of source related growth impacts on soils, vegetation, and visibility;
- G. A Class I Area impact analysis; and
- H. An analysis of the impact of toxic compound emissions.

### **A. BEST AVAILABLE CONTROL TECHNOLOGY**

Under current PSD regulations, an analysis of "top down" BACT is required for the control of each regulated pollutant emitted from a modified major stationary in excess of the specified significant emission rates. The top down approach to the BACT process involves determining the most stringent control technique available for a similar or identical source. If it can be shown that this level of control is infeasible based on technical, environmental, energy, and/or cost considerations, then it is rejected and the next most stringent level of control is determined and similarly evaluated. This process continues until a control level is arrived at which cannot be eliminated for any technical, environmental, or economic reason. A technically feasible control strategy is one that has been demonstrated to function efficiently on identical or similar processes. Additionally, BACT shall not result in emissions of any pollutant which would exceed any applicable standard under 40 CFR Parts 60 and 61.

For this project, BACT analyses are required for VOC emissions from the project.

### **BACT analyses for VOC emissions from Storage Tanks**

#### **Source ID – Description (EQT #)**

22-14, Tank 6413 (Clovelly Dome) EQT0048  
23-14, Tank 6415 (Clovelly Dome) EQT0049  
24-14, Tank 6418 (Clovelly Dome) EQT0050  
25-14, Tank 6419 (Clovelly Dome) EQT0051  
26-14, Tank 6420 (Clovelly Dome) EQT0052  
27-14, Tank 6421 (Clovelly Dome) EQT0053

#### **Potentially Applicable Technology**

Control strategies that could potentially be employed to control VOC emissions from storage vessels include:

- Fixed roof tanks
- External floating roof tanks
- Internal floating roof tanks

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- Closed vent system and control device

Fixed Roof (FR)

A fixed roof tank consists of a cylindrical steel shell with a permanently affixed roof, which may vary in design from cone or dome shaped to flat. Emission losses from FR tanks are caused by changes in temperature, pressure, and liquid level changes. FR tanks are either freely vented or equipped with a pressure/vacuum vent. The latter allows the tanks to operate at a slight internal pressure or vacuum to prevent the release of vapors during very small changes in temperature, pressure or liquid level changes.

External Floating Roof (EFR)

An EFR tank consists of an open-topped cylindrical steel shell equipped with a roof that floats on the surface of the stored liquid. The floating roof consists of a deck, fittings, and a rim seal system. Floating decks are constructed of a welded steel plate and are of two general types: platoon or double deck. With all EFR tanks the roof rises and falls with liquid level in the tank. External floating decks are equipped with a rim seal system, which is attached to the deck perimeter and contacts the tank wall. The purpose of the floating roof and rim seal system is to reduce evaporative loss of the stored liquid. Some annular space remains between the seal system and the tank wall. The seal system slides against the tank wall as the roof is raised and lowered. The floating deck is also equipped with fittings that penetrate the deck and serve operational functions. The EFR design is such that evaporative losses from the stored liquid are limited to losses from the rim seal system and deck fittings (standing storage losses) and any exposed liquid on the tank walls (withdrawal losses).

Internal Floating Roof (IFR)

An IFR tank has both a permanent fixed roof and a floating roof inside. The function of the fixed roof is not to act as a vapor barrier, but to block the wind. The deck in IFR tank rises and falls with the liquid level and either floats directly on the liquid surface (contact deck), or rests on pontoons several inches above the liquid surface (noncontact deck). An IFR roof minimizes evaporative losses of the stored liquid. Both contact and noncontact decks incorporate rim seals and deck fittings for the same purposes as for EFR tanks. Evaporative losses from floating roofs originate from deck fittings, nonwelded deck seams and the annular space between the deck and tank wall. In addition, these tanks are freely vented by circulations vents at the top of the fixed roof. The vents minimize the possibility of organic vapors approaching the flammable range.

Closed Vent System (CVS) and Control Device

A fixed roof can be controlled by connecting its vent to a header routed to a control device, such as a flare, thermal oxidizer, or carbon adsorption system.

All identified technologies are technically feasible.

In general, a closed vent system and control device, an IFR and an EFR are considered top control alternatives in a BACT analysis, though an IFR is often preferred to an EFR for new construction due to its ability to eliminate wind losses. Control requirements are

## **PRELIMINARY DETERMINATION SUMMARY**

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**LOOP LLC**

**Galliano, Lafourche Parish, Louisiana**

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**June 5, 2015**

dependent on the storage vessel size and the vapor pressure of the product stored. LOOP is proposing to build six new 371,000 bbl crude oil storage tanks with a Reid vapor pressure of 8 psi. NSPS KB and LAC 33:III.2103 both stipulate that this combination of tank size and vapor pressure require either an EFR, IFR or closed vent system with control.

A flare associated with a fixed roof would only have a 98% control, while EFR and IFR have control of at least 99%. Therefore the highest reduction would consist of adding a closed vent system and flare to the emission after an EFR or IFR system is used.

If a closed vent system and flare is used for emission control, capital cost, installation and operation shall be evaluated with the reduced emissions from the proposed EFR tank option. Based upon a cost from John Zink Company, an installed combustor having a 98% destruction efficiency has an annualized cost of \$471,667. Each proposed EFR tank is projected to have VOC emissions of 4.33 tpy. The 98% reduction would equate to 4.24 tpy per tank and would be 25.44 tpy for all 6 tanks. Thus the CVS plus flare option yields a cost effectiveness of \$18,540 per ton. Use of a flare would also require a pilot gas and would generate additional criteria pollutants such as NO<sub>x</sub> and CO. Due to economic, environmental, energy impacts and cost, a CVS and flare control option in addition to EFR are considered to be infeasible.

### Internal Floating Roof versus External Floating Roof Options

If an internal floating roof tank is used for emission control, capital cost, installation and operation of an IFR should be evaluated compared to the proposed EFR tank option. IFR and EFR tanks have many similarities affecting cost of the tank including the shell, floor and a the floating roof, etc. The most notable difference on an IFR tank is the addition of a roof over the tank typically made of plate steel. Assuming the difference in capital cost of the IFR to be only the addition of that plate steel roof, the extra cost would be \$255,664 for just the plate, not including transportation, erection or support columns. As noted previously, each EFR tank is projected to have 4.33 tpy of VOC emissions. An IFR tank would only have emissions of 1.46 tpy, resulting in an emission reduction of 2.87tpy. Thus the IFR option yields a cost effectiveness of \$89,082 per extra ton controlled. Due to economic, environmental, energy impacts and cost, a IFR tank control option is considered to be infeasible.

BACT is determined to be storage vessels equipped with EFRs to limit VOC emissions.

### BACT analyses for VOC emissions from Floating Roof Tank landings

#### Source ID – Description (EQT #)

22-14, Tank 6413 (Clovelly Dome) EQT0048  
23-14, Tank 6415 (Clovelly Dome) EQT0049  
24-14, Tank 6418 (Clovelly Dome) EQT0050  
25-14, Tank 6419 (Clovelly Dome) EQT0051  
26-14, Tank 6420 (Clovelly Dome) EQT0052  
27-14, Tank 6421 (Clovelly Dome) EQT0053

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Potentially Applicable Technology

Control strategies that could potentially be employed to control VOC emissions from landing of floating roofs include:

- Limiting the duration that a floating roof is landed
- Closed vent system and control device

Limiting Time

In the case of a floating roof landing (land and refill) limiting the amount of time between the cessation of pumping out product and the start of refilling will reduce the amount of vapors that accumulate under the tank roof that add to the emissions that result when the tank is refilled.

Closed Vent System and Control Device.

Installing a system of vapor collection from an external floating roof to capture and transport the vapors while it is positioned on the roof legs is not practical and has not been previously demonstrated. To capture the vapors would require an IFR tank with the previously discussed costs associated of \$255,664 for the plate for the roofing. Combining the cost of the quoted John Zink Flare, the total additional cost for the roofing and flare would be \$1,534,456, not including the engineering and installation of a capture system that can route vapors properly both during normal storage operation and tank landings. Each proposed EFR tank is projected to have landing emissions of 16.10 tpy. Applying the 98% control, the reduction would equate to 15.78 tpy from all landing events on a per tank basis. Thus the CVS plus flare option yields a cost effectiveness of at least \$16,207 per ton of VOC controlled. Use of a flare would also require a pilot gas and would generate additional criteria pollutants such as NO<sub>x</sub> and CO. Due to economic, environmental, energy impacts and cost, an IFR tank control option with CVS and flare is considered to be infeasible for controlling floating roof tank landing emissions.

BACT is determined to be limiting the time that the floating roof is landed and complying with 40 CFR 60.112b(a)(2)(iii) during each roof landing event.

**BACT analyses for VOC emissions from Floating Roof Tank cleanings**

Source ID – Description (EQT #)

22-14, Tank 6413 (Clovelly Dome) EQT0048  
23-14, Tank 6415 (Clovelly Dome) EQT0049  
24-14, Tank 6418 (Clovelly Dome) EQT0050  
25-14, Tank 6419 (Clovelly Dome) EQT0051  
26-14, Tank 6420 (Clovelly Dome) EQT0052  
27-14, Tank 6421 (Clovelly Dome) EQT0053

## **PRELIMINARY DETERMINATION SUMMARY**

**LOOP LLC - Port Complex**

**Agency Interest No.: 4634**

**LOOP LLC**

**Galliano, Lafourche Parish, Louisiana**

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### **Potentially Applicable Technology**

Control strategies that could potentially be employed to control VOC emissions from landing of floating roofs include:

- Limiting the duration that before removing liquid heels and sludge from the tank bottom after pump out ceases
- Closed vent system and control device

### **Limiting Time**

In the case of a Floating roof cleaning, limiting the amount of time between the cessation of pumping out product and the start of liquid heel and sludge removal from the tank floor will reduce the amount of vapors that accumulate under the tank roof that add to the emissions that result when the tank is subsequently degassed prior to cleaning.

### **Closed Vent System and Control Device.**

Installing a system of vapor collection from an external floating roof to capture and transport the vapors while it is positioned on the roof legs is not practical and has not been previously demonstrated. To capture the vapors would require an IFR tank with the previously discussed costs associated of \$255,664 for the plate for the roofing. Combining the cost of the quoted John Zink Flare, the total additional cost for the roofing and flare would be \$1,534,456, not including the engineering and installation of a capture system that can route vapors properly with other tanks during normal storage operation and possible tank landings. Each proposed EFR tank is projected to have one tank cleaning per year with emissions of 43.72 tpy. Applying the 98% control, the reduction would equate to 42.85 tpy from one cleaning event per year. Thus the CVS plus flare option yields a cost effectiveness of at least \$35,810 per ton of VOC controlled. If all 146.29 tpy VOC emissions from IFR tanks normal operation, tank landings and tank cleaning are used, the cost effectiveness of a CVS and flare is \$10,489 per ton of VOC controlled. Use of a flare would also require pilot gas and would generate additional criteria pollutants such as NO<sub>x</sub> and CO. An additional consideration is that for tank cleaning, manways would be open and fans installed for safe atmospheric conditions for personnel access. All this takes place while the liquid heel and sludge is still within the tank giving off vapors. Due to economic, environmental, energy and safety impacts and cost, an IFR tank control option with CVS and flare is considered to be infeasible for controlling floating roof tank cleaning emissions.

BACT is limiting the amount of time between the cessation of pumping out product and the start of liquid heel and sludge removal from the tank floor during floating roof cleaning.

## **B. ANALYSIS OF EXISTING AIR QUALITY**

Prevention of Significant Deterioration regulations require an analysis of existing air quality for those pollutants to be emitted in significant amounts from a proposed major modification. VOCs are pollutants of concern in this case.

VOC emissions from the proposed facility will exceed 100 tons per year; therefore, an ambient air quality analysis and preconstruction monitoring are required for ozone.

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Based on the proposed site's proximity to an existing LDEQ ozone monitor in Thibodaux, Lafourche Parish, LA (AQS Site ID: 22-057-0004) and the meteorological factors that indicate this data is representative of existing air quality conditions at the proposed site, a waiver for preconstruction monitoring was granted. This monitoring station is approximately 38 miles north-west of the site location. The prevailing wind from the site is towards this monitor (from the southeast) For post-construction monitoring, LDEQ has approved the use of the Thibodaux, Lafourche Parish, LA ozone monitor.

**C. NATIONAL AMBIENT AIR QUALITY STANDARDS (NAAQS) ANALYSIS**

Because ISCST3 modeling analyses indicated concentrations of each pollutant would be below its PSD ambient significance level, refined NAAQS modeling was not required.

**D. PSD INCREMENT ANALYSIS**

Because ISCST3 modeling analyses indicated concentrations of each pollutant would be below its PSD ambient significance level, PSD increment modeling was not required.

**E. SOURCE RELATED GROWTH IMPACTS**

Operation of this facility is not expected to have any significant effect on residential growth or industrial/commercial development in the area of the facility. No significant net change in employment, population, or housing will be associated with the project. As a result, there will not be any significant increases in pollutant emissions indirectly associated with LOOP LLC's proposal. Secondary growth effects will include 15 temporary construction related jobs and 0 permanent jobs.

**F. SOILS, VEGETATION, AND VISIBILITY IMPACTS**

There will be no significant impact on area soils, vegetation, or visibility.

**G. CLASS I AREA IMPACTS**

Louisiana's Breton Wildlife Refuge the nearest Class I area, is about 60 kilometers from the site. As such, an ozone impact analysis, including the gathering of ambient air quality data was conducted. An existing LDEQ ozone monitor in Thibodaux, Lafourche Parish, LA (AQS Site ID: 22-057-0004) was selected. The monitor is approximately 38 miles north-west and the prevailing wind from the site is towards this monitor (from the southeast). These meteorological factors indicate this data is representative of existing air quality conditions at the proposed site. Data from the monitor indicates that the NAAQS ozone level is not exceeded, and the area is currently classified as in attainment. A review of the historical ozone concentration data from the last decade shows a slight downward trend, indicating overall positive movement toward continued compliance with the ozone standard. Additional VOC emission data was collected from multiple parishes surrounding the facilities location. The facilities proposed VOC increase is approximately only a 2.5% increase. Based upon this analysis, the proposed project will have no significant impact on ozone levels in and around the facility.

**PRELIMINARY DETERMINATION SUMMARY**

**LOOP LLC - Port Complex**

**Agency Interest No.: 4634**

**LOOP LLC**

**Galliano, Lafourche Parish, Louisiana**

**PSD-LA-796**

**June 5, 2015**

**H. TOXIC EMISSIONS IMPACT**

The selection of control technology based on the BACT analysis included consideration of control of toxic emissions.

**V. CONCLUSION**

The Air Permits Division has made a preliminary determination to approve the construction of the tank project at the LOOP LLC - Deepwater Port Complex near Galliano in Lafourche Parish, Louisiana, subject to the attached specific and general conditions. In the event of a discrepancy in the provisions found in the application and those in this Preliminary Determination Summary, the Preliminary Determination Summary shall prevail.

## SPECIFIC CONDITIONS

**LOOP LLC - Port Complex**  
**Agency Interest No.: 4634**  
**LOOP LLC**  
**Galliano, Lafourche Parish, Louisiana**  
**PSD-LA-796**

1. Comply with the Louisiana General Conditions as set forth in LAC 33:III.537. [LAC 33:III.537]
2. The permittee is authorized to operate in conformity with the specifications submitted to the Louisiana Department of Environmental Quality (LDEQ) as analyzed in LDEQ's document entitled "Preliminary Determination Summary" dated June 5, 2015, and subject to the following emissions limitations and other specified conditions. Specifications submitted are contained in the application and Emission Inventory Questionnaire dated December 29, 2014, along with supplemental information dated April 27, 2015.

## MAXIMUM ALLOWABLE EMISSIONS RATES

ID No.	Description		VOC
EQT0048	22-14, Tank 6413 (Clovelly Dome)	Normal Operation	Equip tanks with External Floating Roofs that meet 40 CFR 60 Subpart Kb
EQT0049	23-14, Tank 6415 (Clovelly Dome)		
EQT0050	24-14, Tank 6418 (Clovelly Dome)		
EQT0051	25-14, Tank 6419 (Clovelly Dome)		
EQT0052	26-14, Tank 6420 (Clovelly Dome)		
EQT0053	27-14, Tank 6421 (Clovelly Dome)		
EQT0048	22-14, Tank 6413 (Clovelly Dome)	Tank Landings	Limit the time that the floating roof is landed and complying with 40 CFR 60.112b(a)(2)(iii) during each roof landing event.
EQT0049	23-14, Tank 6415 (Clovelly Dome)		
EQT0050	24-14, Tank 6418 (Clovelly Dome)		
EQT0051	25-14, Tank 6419 (Clovelly Dome)		
EQT0052	26-14, Tank 6420 (Clovelly Dome)		
EQT0053	27-14, Tank 6421 (Clovelly Dome)		
EQT0048	22-14, Tank 6413 (Clovelly Dome)	Tank Cleanings	Limit the amount of time between the cessation of pumping out product and the start of liquid heel and sludge removal from the tank floor during floating roof cleaning.
EQT0049	23-14, Tank 6415 (Clovelly Dome)		
EQT0050	24-14, Tank 6418 (Clovelly Dome)		
EQT0051	25-14, Tank 6419 (Clovelly Dome)		
EQT0052	26-14, Tank 6420 (Clovelly Dome)		
EQT0053	27-14, Tank 6421 (Clovelly Dome)		

**TABLE I: BACT COST SUMMARY**

**LOOP LLC - Port Complex  
Agency Interest No.: 4634  
LOOP LLC  
Galliano, Lafourche Parish, Louisiana  
PSD-LA-796**

Control Alternatives		Availability/ Feasibility	Negative Impacts (a)	Control Efficiency	Emissions Reduction (TPY)	Capital Cost (\$)	Annualized Cost (\$)	Cost Effectiveness (\$/ton)	Notes
<b>Clovelly Dome tanks (EQT0048-EQT0053)</b>									
VOC	Internal Floating roof design (Closed roof versus External Floating Roof)	Feasible	economic	99%	2.87/tank	\$255,664		\$89,082	
VOC	Closed Vent System and Flare Assumes it controls all IFR tank emissions from normal operation, all tank landing emissions and the tank cleaning operation.	Feasible	1,2 & 3	98%	154.75	\$2,387,959	\$471,667	\$18,479	Did not include cost of plate for each roof
Notes: a) Negative impacts: 1) economic, 2) environmental, 3) energy, 4) safety									

**TABLE II: AIR QUALITY ANALYSIS SUMMARY**

**LOOP LLC - Port Complex  
Agency Interest No.: 4634  
LOOP LLC  
Galliano Lafourche Parish, Louisiana  
PSD-LA-796**

Pollutant	Averaging Period	Preliminary Screening Concentration (µg/m³)	Level of Significant Impact (µg/m³)	Significant Monitoring Concentration (µg/m³)	At the Monitoring Station		Background (µg/m³)	Maximum Modeled Concentration (µg/m³)	Modeled + Background Concentration (µg/m³)	NAAQS (µg/m³)	Modeled PSD Increment Consumption (µg/m³)	Allowable Class II PSD Increment (µg/m³)
					Monitored Values (µg/m³)	Modeling results (µg/m³)						
PM <sub>10</sub>	24-hour		5	10						150		30
	Annual		1	-						50		17
SO <sub>2</sub>	3-hour		25	-						1300		512
	24-hour		5	13						365		91
	Annual		1	-						80		20
NO <sub>x</sub>	Annual		1	14						100		25
CO	1-hour		2000	-						40,000		-
	8-hour		500	575						10,000		-
Lead	3-month		-	0.1						1.5	-	-

NR = Not required.